BROOKVENT

Heat Recovery Ventilation

BROOKVENT aircycle

Applicable to **aircycle 1.1/1.2**
(**Ws -** For Wall Mounting with **In-built** Control & Summer Bypass)

Installation and Maintenance

Instructions for the Installer.

Please refer to the User Manual for instructions on how to operate the system

PLEASE KEEP THESE INSTRUCTIONS WITH THE PRODUCT.
Please read this manual fully prior to installing the HRV unit

IMPORTANT:
This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

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1.0 Introduction

The Brookvent aircycle 1.1/1.2 is an extremely compact and highly efficient Mechanical Heat Recovery Ventilation (MHRV) system, specifically designed smaller dwellings with restricted space.

The system should be run continuously 24 hours a day, and should only be disconnected by a competent person during service or maintenance.

Heat Recovery ventilation works best in new homes, which are extremely airtight and have high efficiency ratings. These dwellings require a high level of fresh air to ensure a healthy living environment.

The system works by drawing stale air from 'wet rooms' such as Bathrooms, WC's and Kitchens, recovering up to 90% of the heat from this air using a highly efficient heat exchanger, before expelling the waste air outside the home. At the same time, fresh air is drawn into the home, filtered and warmed by the recovered heat and supplied into the 'habitable rooms' such as bedrooms, dining rooms and living rooms.

1.1 Model Variations

This installation manual refers to the Brookvent aircycle 1.1 and pertains to the following models:

- aircycle 1.1/1.2 **Ws**
  (Wall Mounted Version with In-built Control & Summer Bypass)

1.2 Product Guarantee

This product is guaranteed against defects for a period of 5 years from date of purchase. With the first year covering parts and labour, and the remaining 4 years covering parts only. In the instance of such a defect, Brookvent may, at its absolute discretion, repair the product, replace the product free of charge or refund the cost of the product.

In terms of installation, operation and maintenance, please follow all instructions provided, if this product has been misused or handled carelessly it may lead to the guarantee being declared void.

Brookvent does not accept any liability for damage caused by non-observance of the installation instructions. Service activities must be carried out by Brookvent or by registered installers using original Brookvent parts.

This guarantee does not affect your statutory right as a consumer.

2.0 Safety

The following information must be read carefully to ensure safe installation and operation of the Brookvent MHRV system.

2.1 General Safety

- Do not use this appliance for functions other than those described in this booklet.
- Never touch the appliance with wet hands.
- The unit is only suitable for 230 VAC/50Hz electric mains.
- Never modify the fan or electronics, all repairs must be conducted by Brookvent.
- Never connect the power if electronics cover is not fitted.
- Do not store inflammable products in the neighbourhood of the unit.

2.2 Responsibility of the Installer

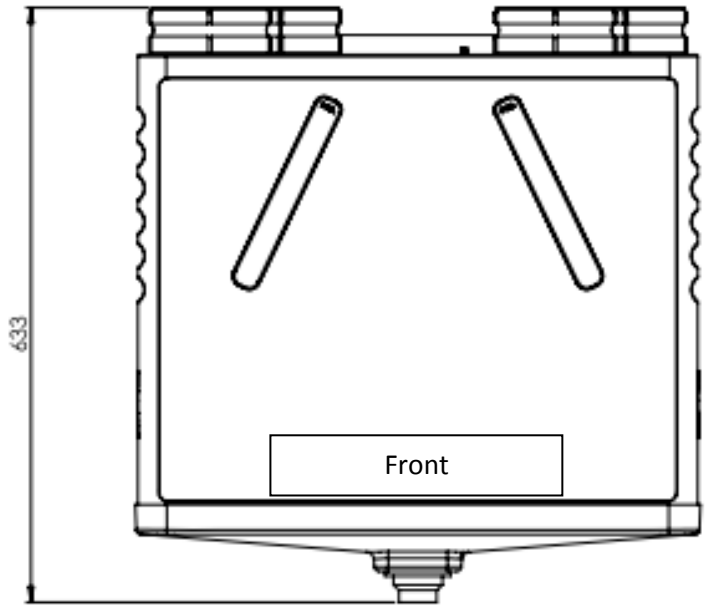
- Correct Installation, balancing and commissioning of the MHRV unit.
- Record measured air flow volumes on each of the valves at High and Low rate.
- Compliance to requirements and local additional rules.
- Explanation of the ventilation system to the user.
- Warning for the user, to check or replace the air filters on time.
- All the above, as set out in the latest edition of the Domestic Ventilation Compliance Guide and the SAP Appendix Q – installation Guide and Checklist.

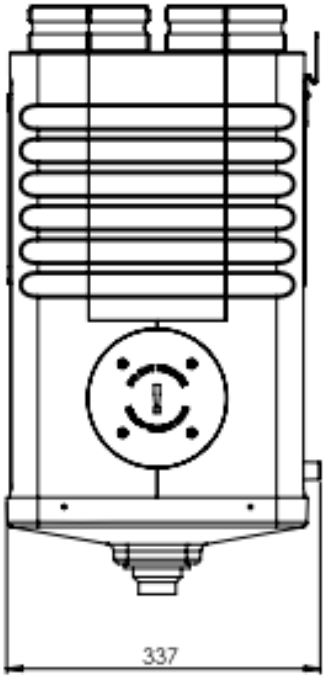
2.3 Responsibility of the Occupant

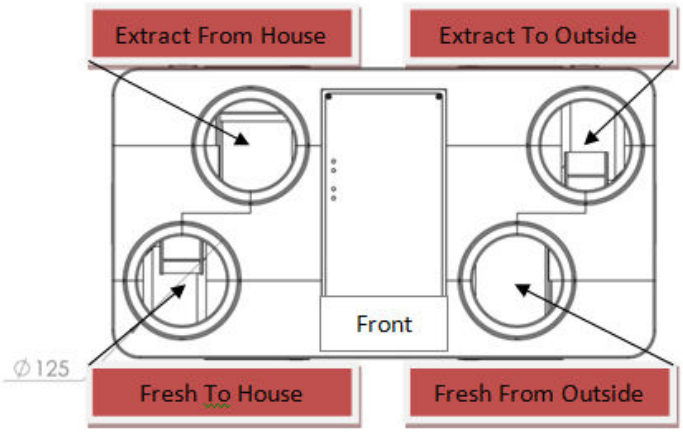
- Replacement of the filters as per the recommended interval.
- Cleaning the valves in the rooms regularly to prevent blockage.
- To ensure that the system is functioning properly on a regular basis
- To use manual boost switches (where provided) to prevent build-up of pollutants or mould growth.

IMPORTANT: Dirty or clogged filters may cause inadequate ventilation in the home which may lead to health issues. It is important that the filters are changed **at least** once per year or as required. In new build properties it may be prudent to check/ change your filters after the first 3 months of occupancy depending on the amount of residual 'building dust' present within the property.

3.0 Specifications







3.1 Detailed Specification

Dimensions: 595mm x 556mm x326mm

Weight: 10kg

Materials: Main Enclosure: Impact Resistant EPP (Expanded Polypropylene)
Filters: Polyester Media (G2/3)

Electrical: 240V EC Quiet Fan Technology

Controls: Extremely Efficient In-built Control Board
Single 240v boost input (Light switch, humidistat, PIR, etc)
Single 240v boost supply line (optional)

Fully complies with Building Regulations for UK & Ireland
SAP Q Eligible

Specific Fan Power: From 0.7 w/l/s
Heat Recovery: Up to 90% efficiency

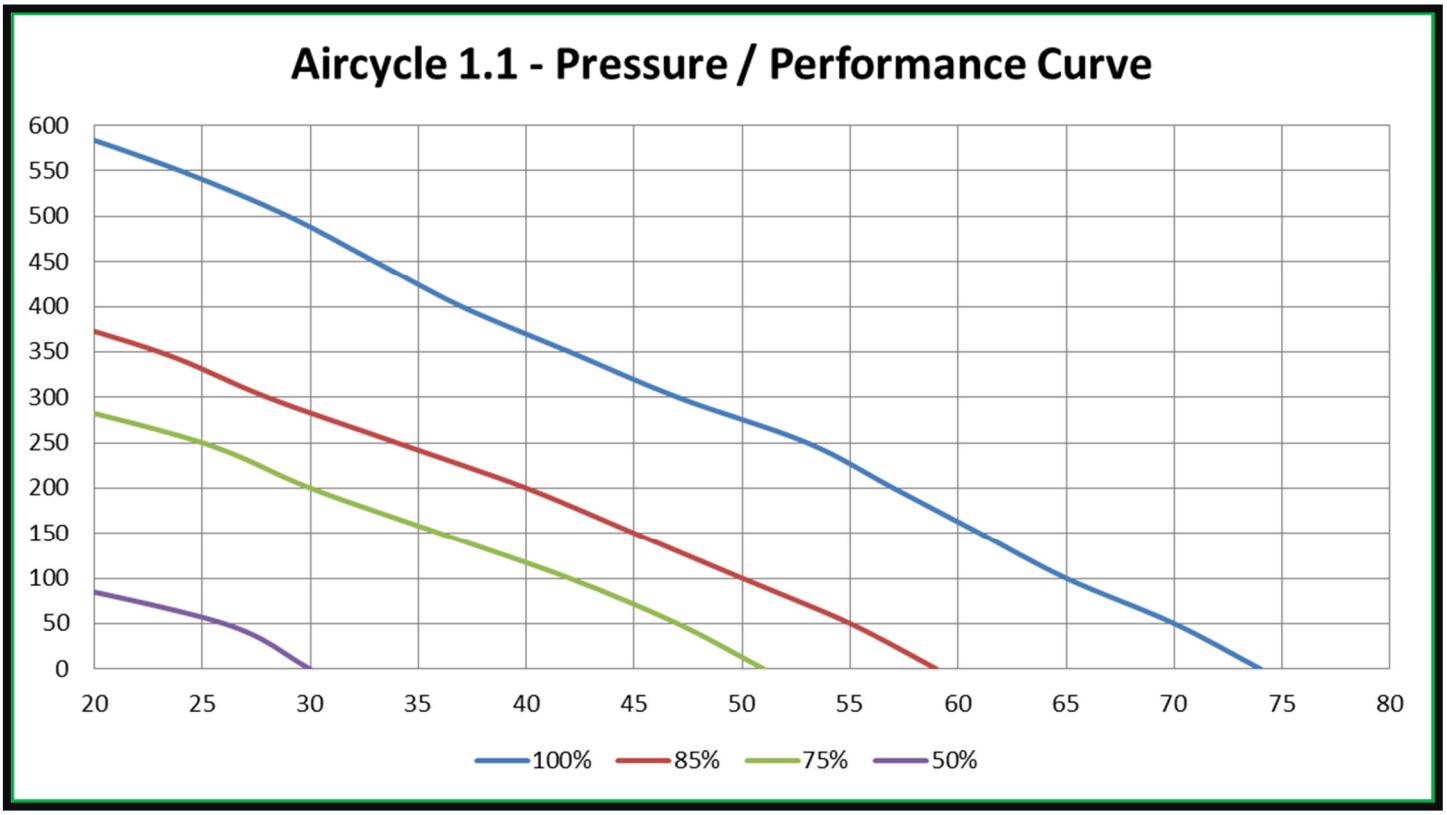
SAP Appendix Q Results

Table Q2 – Systems with **rigid** ductwork only

Exhaust terminal configuration	Fan speed setting	Specific fan power (W/l/s)	Heat exchange efficiency (%)	Energy Saving Trust Best Practice Performance Compliant
Kitchen + 1 additional wet room	26%	**0.70**	**90**	Yes
Kitchen + 2 additional wet rooms	35%	**0.71**	**89**	Yes
Kitchen + 3 additional wet rooms	43%	**0.77**	**88**	Yes
Kitchen + 4 additional wet rooms	51%	**0.87**	**87**	Yes

www.sap-appendixq.org.uk/documents/Brookvent_Aircycle_MVHR_BP_.pdf

3.2 Airflow: Pressure/ Performance Curve



4.0 Installation

It is important that the full installation of this system is carried out by competent persons, including all electrical works and connections being completed by a qualified electrician.

The MVHR unit is designed to be installed indoors, within an attic, storage cupboard, or void space, away from exposure to frost, water, or intense heat.
A clear access space is required around the unit; this will ensure ease of installation relating to ductwork, wiring, and the connection of the condensate drain. It is important that filters to the system can also be accessed for replacement.

4.1 Mounting

The aircycle 1.1/1.2 Ws is designed for Wall Mounting only. The unit should be attached the to the wall as shown using the wall bracket provided, please ensure the mounting surface can safely bear the load of the unit using suitable screw fixings.
One bracket should be secured to the back of the unit as shown in **Fig. 1**, the second bracket should be secured to the mounting surface as shown in **Fig. 2**. Please ensure the brackets are level.
The unit can then be set onto the mounting surface with the lip of each bracket intersecting as shown in **Fig. 3**

Fig. 1

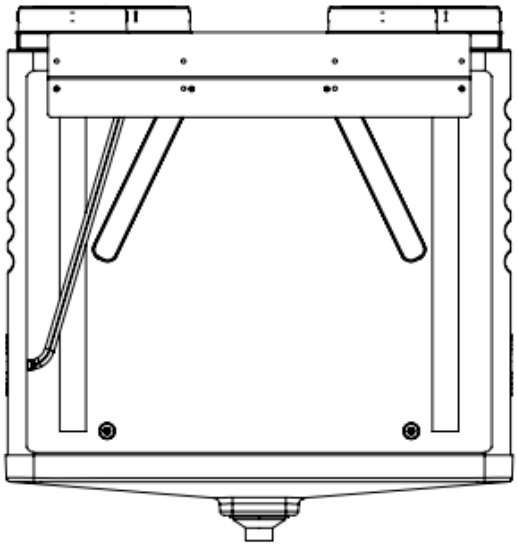
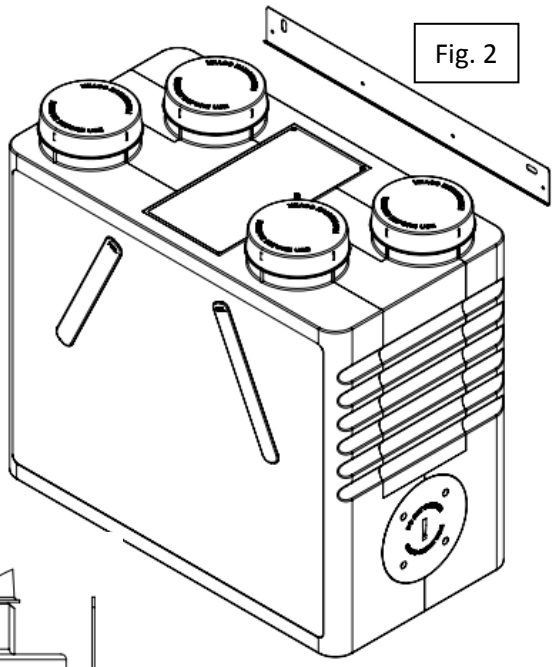


Fig. 2



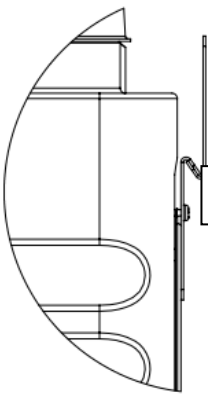


Fig. 3

4.2 Ductwork and Connections

To comply with SAP Appendix Q, and to facilitate the air flow performance, all ducting used should be rigid. If flexible ducting is required, it should be kept to an absolute minimum of 300mm and kept taut as per the Domestic Compliance Guide (Part F: Eng and Wales 2010)

The spigots on the Brookvent aircycle 1.1/1.2 systems are suitable for connection to 125mm diameter round pipe.

The label on top of the unit clearly identifies which spigot should be connected to which ducting route with the dwelling. This is also shown clearly within this manual.

To assist the performance of this HRV unit, it is recommended that 125mm diameter round pipe is used (where possible) to connect to the spigots and continue throughout the dwelling, this will assist in keeping pressure losses to a minimum.

Where it is not possible to continue throughout the dwelling in rigid 125mm diameter round pipe due to the void spaces available, a conversion to rigid 204mm x 60mm flat rectangular ducting is recommended. It is recommended that the number of bends in the ducting system is kept to a minimum.

Each of the external roof terminals / wall terminals must be the equivalent to the open area of 125mm diameter round pipe.

To facilitate air circulation within the dwelling there must be a minimum of 10mm undercut on each of the doors (to the finished floor) within the dwelling (or grills placed at low level on the doors).

Extract air valves should be placed in all wet rooms (kitchen, utility, en-suite, etc.) and should be sited, where possible, close to the main source of humidity/ pollutant.

Fresh supply air valves should be placed in all habitable rooms (bedroom, sitting room, dining room, etc.).

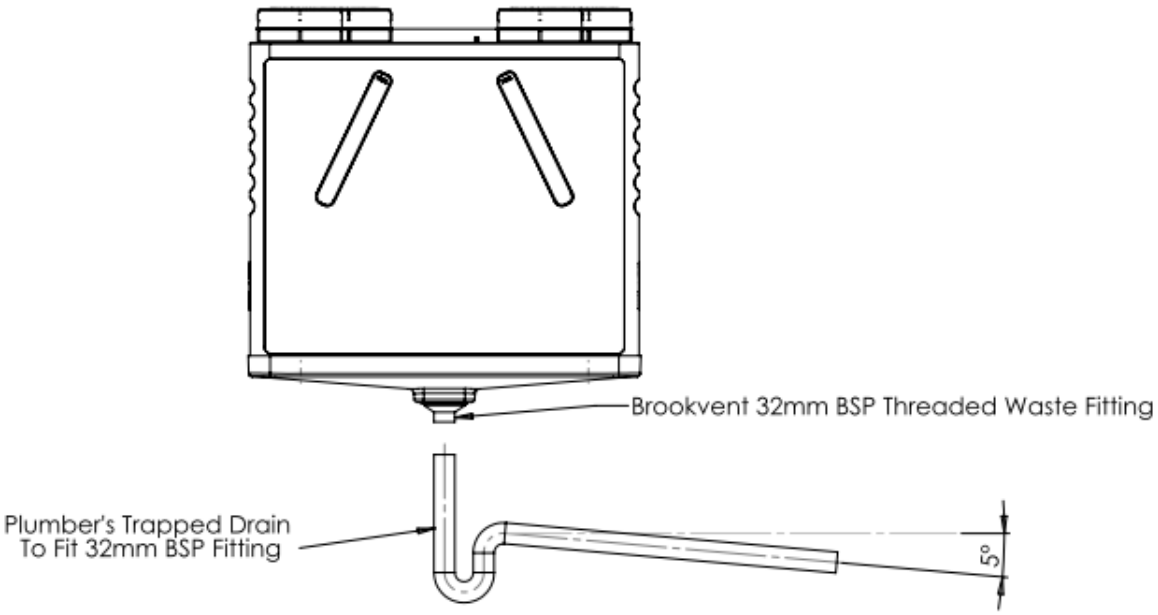
Duct designs/ layouts should always be adhered to if provided.

Important: The Domestic Compliance Guide: Eng and Wales 2010 should be adhered to as part of the installation process.

4.3 Connection of Condensate Drain

HRV systems generate considerable amounts of moisture due to their high Heat Recovery Efficiency; this moisture must be drained from the system.

The aircycle 1.1/1.2 is supplied complete with a centralised drainage connection on the bottom of the unit.



The condensate drain should incorporate a “P Trap” or equivalent, as shown, before being discharged into the waste drainage system of the dwelling. The “P Trap” should be filled creating an immediate seal upon installation.

It is imperative that there is a gravitational fall from the unit to the discharge point ensuring that the water drains from the unit. A minimum fall of 5 Degrees should be ensured throughout as shown. Drainage piping/ connections should be insulated if located in cold roof spaces.

5.0 Electrical Connections/ Wiring

Important: All the electrical connections must be carried out by a qualified electrician.
Installations and wiring must conform to current IEE regulations (UK), local or appropriate regulations (applying to other countries).

Electrical Details:

Voltage: 230 V AC ~

Fuse rating: 5 A

Warning: This unit must be earthed.

Please Note: The core cable from the mains power supply must be connected to a fixed wiring installation, via a 5 amp fused isolator, as to comply with current IEE wiring regulations.

A switch or circuit breaker must be used in the power supply circuit. It should be in close proximity to the HRV unit and should be clearly marked as the disconnecting device for the HRV Unit.

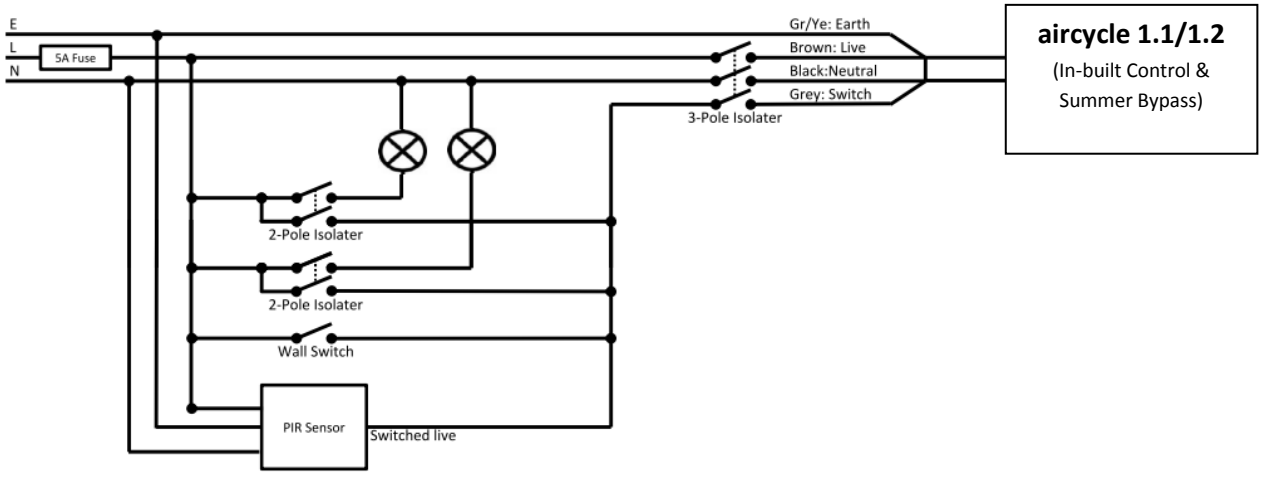
Connecting to Mains:

The aircycle 1.1/1.2 unit comes pre-wired with 1m length of 4-core cable, which should be connected into a fan-isolation switch. In turn a 3-core mains cable should be used to connect to a 5A fused spur, which should be located close to the unit.

Yellow = Earth
Black = Neutral
Brown = Live
Grey = Switch

The grey switch wire is used to boost the system. When a live 240v signal is applied, the Auto Boost function will be triggered.

Wiring Schematic



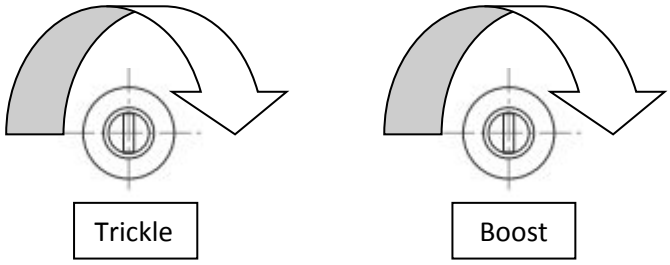
6.0 Fan Speed Control

The fan speeds of the unit are controlled by two potentiometers (Speed Pots) on top of the unit; these are clearly marked “Trickle” and “Boost”.

These two separate speed options allow one speed to be set for normal day to day operation (I.e. Trickle) and an increased speed to be set (I.e. Boost) that operates only when the Grey switch wire is triggered by a 240v boost signal such as a Wall Switch or Humidity Stat.

If the Boost is required to be set, it should always be set higher than the Trickle.

Turing these Speed Pots clockwise increases the fan speed.



6.1 Tempering Summer Bypass

The Tempering Summer Bypass, unique to Brookvent, operates on a linear scale between 20 Degrees Celsius (No Summer Bypass) and 27 Degrees Celsius (Full Summer Bypass); gradually increasing the amount of air directed around the Heat Recovery Core as the temperature of the extract air from the home rises thus comfortably regulating the indoor air temperature during warmer months.

This feature is factory set, automatic, and requires no maintenance.

7.0 Maintenance

Warning: Dangerous Voltage. Before completing any form of maintenance, ensure to isolate the unit from the mains and ensure all supply circuits are disconnected.

This HRV unit may contain connections/signal wires from multiple electrical circuits. **ISOLATING THE CONTROL BOX WILL NOT ISOLATE ALL CIRCUITS WITHIN THE UNIT- PLEASE ENSURE ISOLATION OF ALL CONNECTING CIRCUITS BEFORE ACCESSING THE UNIT.** Examples of other connecting circuits are: electric showers, lighting circuits, and humidistats. These connecting circuits may be used to trigger the auto-boost the system.

It is important to follow all guidelines relating to the maintenance of this HRV system to ensure the unit continues to perform to the levels required.

7.1 Filter Replacement

The filters of this HRV unit will usually need to be changed every 6 – 12 months depending on occupancy/ use, and the type of environment the dwelling is located in (I.e. urban/ rural, and their associated levels of airborne pollutants).

It is recommended that the filters are checked every 6 months. Replacement filters can be purchased by contacting the Brookvent Head Office.

To change the filters, simply remove the filter covers from the front of the unit, replace the filters, and replace the filter covers firmly.

Important: Blocked filters will shorten the life span of your fan and increase the energy consumption. Never run the HRV system without filters as this will allow unfiltered material to build up in the heat recovery core and connected ductwork.

In new build properties it may be prudent to check/ change your filters after the first 3 months of occupancy depending on the amount of residual 'building dust' present within the property

7.2 Additional Maintenance Checks

It is recommended that the following checks are also made when completing annual maintenance of the HRV unit:

- Condensate Drain: Ensure the condensation drain is firmly secured and is clear of any debris, remove/ clean if necessary.
- Fixings: Ensure that all of the unit fixings and the mounting fixings have not become loose over time and are kept sufficiently tight.

8.0 Commissioning

Commissioning is carried out to ensure that the required air flows are achieved throughout the property. The volume airflow at each point should be measured using a suitably calibrated Airflow Meter (anemometer), this is should be fitted with an adapter/ hood to ensure all air is captured and measured by the device.

For the required airflow rates refer to the design specification for the property and or refer to Building Regulations (Part F)

If further guidance is required on the commissioning process please contact BROOKVENT directly using the information provided below.

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